

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method for producing a plastic film with gas-containing bubbles, the method comprising the steps of:

mixing a cavitation material into a plastic [(5a)] material to form an extrusion material;

from the extrusion material, extruding a plastic film [(5)]; orientating the plastic film by stretching such that cavitation bubbles are formed in the plastic film; and

while orientating the plastic film [(5)] by stretching, feeding a ~~prezzurized~~ pressurized gas into the plastic film ~~to form cavitation bubbles in the plastic film, the pressurized gas arranged to act on the plastic film (5)~~ so that the gas diffuses [(in)] into the cavitation bubbles and expands the bubbles, and thus expanded bubbles [(25)] containing the gas are formed in the plastic film [(5)].

2. (currently amended) A method according to claim 1, wherein said orientating by stretching step, provides a first orientation in a first direction, and thereafter, the plastic

film ~~[(5)]~~ is subjected to a second orientation which is substantially perpendicular to the first orientation so that the bubbles ~~[(25)]~~ containing gas expand due to the influence of the second orientation and the gas.

3. (currently amended) A method according to claim 2, ~~characterized in that~~ wherein at the first orientation the plastic film ~~[(5)]~~ is orientated in a machine direction and at the second orientation the plastic film ~~[(5)]~~ is orientated in a direction substantially transverse to the machine direction.

4. (currently amended) A method according to claim 1, ~~characterized in that~~ wherein a pressure of the gas acting on the plastic film ~~[(5)]~~ is over 3 bars.

5. (currently amended) A method according to claim 1, ~~characterized in that~~ wherein before extrusion, an oily substance or a substance having a melting point lower than an orientation temperature of the plastic ~~[(5a)]~~ material is mixed into the plastic ~~[(5a)]~~ material.

6. (currently amended) An apparatus for making a plastic film, the apparatus comprising an extruder, ~~[(1)]~~ and at least one orientation device ~~(12, 17)~~ for orientating the

extruded film $[(5)]$, and a ~~characterized in that the apparatus~~
~~comprises~~ gas supply means ~~(15, 16)~~ arranged in at least one
orientation device ~~(12, 17)~~ for feeding pressurized gas into the
plastic film $[(5)]$ simultaneously with orientation by
stretching so that the fed gas diffuses in the cavitation bubbles
that are formed in the plastic film $[(5)]$ during stretching,
and thus expanded bubbles $[(25)]$ containing the fed gas are
formed in the plastic film.

7. (currently amended) An apparatus according to claim
6, ~~characterized in that~~ wherein the gas supply means $[(15,$
 $16)]$ are arranged in the first orientation device $[(12)]$ and
 $[[that]]$ wherein the apparatus comprises a second orientation
device $[(17)]$ after the first orientation device $[(12)]$ in
the direction of the plastic film $[(5)]$, the second orientation
device $[(17)]$ being arranged to orientate the plastic film
 $[(5)]$ in the direction substantially transverse to the
orientation direction of the first orientation device $[(12)]$ so
that the bubbles $[(25)]$ containing gas expand due to the
influence of the second orientation device $[(17)]$ and the gas.

8. (currently amended) An apparatus according to claim
7, ~~characterized in that~~ wherein the first orientation device
 $[(12)]$ is arranged to orientate the plastic film $[(5)]$ in the

machine direction and the second orientation device $[(17)]$ is arranged to orientate the plastic film $[(5)]$ in the direction substantially transverse to the machine direction.

9. (currently amended) An apparatus according to claim 6, ~~characterized in that~~ wherein the gas supply means $[(15, 16)]$ comprise a discharge chamber $[(15)]$, in which case at least one orientation device $[(12, 17)]$ is arranged inside the discharge chamber $[(15)]$ so that the pressure of the gas in the discharge chamber $[(15)]$ acts on both sides of the plastic film $[(5)]$ simultaneously with the orientation effect of the orientation device $[(12, 17)]$.

10. (currently amended) An apparatus according to claim 6, ~~characterized in that~~ wherein the extruder $[(1)]$ comprises a nozzle $[(6)]$ which is arranged to widen up to the end portion of the extruder $[(1)]$.

11. (currently amended) An apparatus according to claim 6, ~~characterized in that~~ wherein the apparatus comprises a cross-direction orientation device $[(17)]$, which comprises two orientation wheels $[(18)]$ and endless orientation bands $[(19)]$ which are arranged against the wheels and move around band guide rolls $[(20)]$, both edges of the plastic film $[(5)]$

to be orientated being arranged between the orientation wheel $[(18)]$ and the orientation band $[(19)]$ and the orientation wheels $[(18)]$ and the orientation bands $[(19)]$ being arranged so that in the direction of the plastic film $[(5)]$ they are further away from one another at the end than at the beginning, in which case the cross-direction orientation device $[(17)]$ stretches the plastic film $[(5)]$ in the cross-direction.

12. (currently amended) An apparatus according to claim 11, ~~characterized in that~~ wherein the apparatus comprises a curved support plate $[(21)]$, which is arranged between the orientation wheels $[(18)]$ to support the plastic film $[(5)]$.

13. (currently amended) An apparatus according to claim 12, ~~characterized in that~~ wherein the support plate $[(21)]$ is provided with gaps $[(21a)]$ and heated gas is arranged to flow through the gaps to heat the sliding surface of the support plate $[(21)]$ and plastic film $[(5)]$.

14-17. (canceled)

18. (currently amended) A method for producing a plastic film with gas-containing bubbles, the method comprising the steps of:

mixing a cavitation material into a plastic material to form an extrusion material;

from the extrusion material, extruding a plastic film;
orientating the plastic film by stretching for forming bubbles in the plastic film; and

during a first orientation stage of orientating the plastic film by stretching, feeding a pressurized first gas into the plastic film to introduce the first gas into the bubbles so that ~~form cavitation bubbles in the plastic film,~~ the bubbles ~~containing~~ contain the first gas.

19. (currently amended) The method of claim 18, wherein the material is selected so that the ~~pressurized first gas~~ cavitation material tears joint surfaces of molecules of the plastic film.

20. (currently amended) The method of claim 18, wherein the cavitation material is calcium carbonate particles.

21. (currently amended) The method of claim 21, wherein the first gas is ~~sulphurhexafluoride~~ sulphurhexafluoride.

22. (previously presented) The method of claim 18, wherein the first gas is air.

23. (previously presented) The method of claim 18, wherein the gas is nitrogen.

24. (previously presented) The method of claim 18, wherein a pressure of the first gas is between 3 and 20 bars.

25. (new) An apparatus according to claim 6, wherein the gas supply means comprises a discharge chamber.

26. (new) An apparatus according to claim 25, wherein the pressure of the gas in the discharge chamber acts on both sides of the plastic film.